DOCUMENT RESUME

ED 225 458 HE 015 812

AUTHOR Fogleman, Janice M.
TITLE Evaluation of Affective Traits of Medical Technology Students.
PUB DATE Mar 82
NOTE 50p.; Master's Thesis, Pennsylvania State University.
PUB TYPE Dissertations/Theses - Master Theses (042) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Affective Behavior; *Behavioral Objectives; *Behavior Rating Scales; Evaluation Methods; Higher Education; *Medical Technologists; Questionnaires; Rating Scales; Staff Role; *Student Evaluation; *Test Construction

ABSTRACT

An observational rating instrument was developed to measure affective traits of medical technology students. Fourteen categories of behavioral traits evaluated by medical technology programs were identified, based on results of a national survey. These traits were then grouped according to the affective domains established by Krathwohl, Bloom, and Masia (1971). Affective objectives were developed for medical technology students, including the following: being attentive and demonstrating an attitude of appropriate response to instructions and duties, showing a value system consistent with clinical laboratory professionalism and the ability to set priorities for tasks, and internalizing the values. In addition, 49 behavioral statements that defined the affective traits were identified and incorporated into a questionnaire, which was administered to medical technology education coordinators and instructors in Pennsylvania. Thirty respondents classified each behavior according to the most appropriate behavior category and rated each behavior according to its importance in the role of the medical technologist. Findings resulted in 31 affective traits that were used in the final instrument, a Likert-type scale for rating students. A literature review, bibliography, questionnaire, list of schools surveyed, and instructions for using the evaluation form are included. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED225458

The Pennsylvania State University

The Graduate School

Capitol Campus

EVALUATION OF AFFECTIVE TRAITS OF MEDICAL TECHNOLOGY STUDENTS

A Master's Production

by

Janice M. Fogleman

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Janice M. Fogleman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Education

March 1982

HE 015 812

TABLE OF CONTENTS

Chapter		Page
1.	INTRODUCTION	1
	Background	1
	Purpose	2
2.	REVIEW OF THE LITERATURE	3
	Reasons to Evaluate Affective Behavior	3
	Advantages and Disadvantages of Observational Assessment	4
	Selecting and Defining the Behavior to be Evaluated	5
	Types of Observational Tools	7
	The Checklist	7
	The Rating Scale	8
	Anecdotal Records	10
	Critical Incident Technique	10
	Summary	10
	Construction of an Evaluation Instrument	11
3.	DESCRIPTION OF THE PRODUCTION	14
	Objectives	14
	Development of the Evaluation Form	16
BIBLIOGRAPHY		22
APPENDIXES		
I.	COLLECTION OF EVALUATION FORMS	25
II.	SURVEY QUESTIONNAIRE	26
III.	SURVEY STATISTICS	32
IV.	STUDENT PROGRESS REPORT	36
THE PRODUCTION		37

CCC 3

Chapter 1

INTRODUCTION

Background

"Throughout the history of mankind, evaluation, in some form, has been used to categorize human behavior" (Bell, 1975:62). Education programs in the health professions have been evaluating student performance for quite some time. Rines (1963:62) lists the following as some of the reasons for using an evaluation process:

1. to determine the progress a student is making toward achieving the goals of the program
2. to help the individual student maintain strengths and eliminate weaknesses
3. to motivate the student

When Medical Technology instructors evaluate students, they have three concerns: the technical competence of the student; the cognitive skills or knowledge; and the affective or behavioral traits. Technical competence can be measured by performance examinations and cognitive skills can be measured by oral or written tests, however, affective traits are more difficult to measure.

Affective behavior is best described as that which emphasizes a feeling tone, an emotion, or a degree of acceptance or rejection (Krathwohl, Bloom, and Masia, 1971:7). Affective traits are expressed as interests, attitudes, appreciations, values, and emotional sets or biases.

Affective objectives are often overlooked in education because of the amount of time and effort which is necessary to effectively

identify, instruct, and evaluate these objectives (Conners, 1979:32). The most problematic area seems to be evaluation. Educators are uncomfortable with placing judgement on student behaviors in the affective realm because it is difficult to measure aspects such as attitudes, beliefs, and values. Zimbardo, Ebbesen, and Maslach (1977:213) pose the question "How do you measure something inside a person's mind", and answer, "get the person to translate an internal attitude into an external behavior." When one translates an attitude into an external behavior, one is making an inference that the behavior manifests the attitude. This then becomes the basis for the evaluation of affective traits -- the observation of behavior.

Observational assessment is often used to make judgements regarding interpersonal skills, habits and attitudes. These types of affective traits often lack well-defined criteria for making judgements. As a result, assessments are subjective and are too often biased by instructors' personalities and preferences. Subjectivity and bias are a major limitation of direct observation (Thorndike and Hagen, 1969:482). Careful defining of behavior and the criteria by which it is judged helps to eliminate the danger of subjectivity and inconsistency of the evaluation.

Purpose

The purpose of this production was to develop an observational rating instrument to measure affective traits of Medical Technology students eliminating or minimizing observer subjectivity and bias. This was accomplished by defining the traits to be measured in terms of observable behaviors rather than abstract terms.

Chapter 2

REVIEW OF THE LITERATURE

Reasons to Evaluate Affective Behavior

Education programs in the allied health fields are subject to rigorous evaluation because of the ultimate responsibility of the student for the preservation of life (McTeran and Hawkins, 1972). The affective states that interest allied health educators are those which reveal themselves in the student's professional demeanor. Qualities such as co-operation with co-workers, confidence, dependability and resourcefulness are some of the affective states which comprise professionalism.

Most health professionals have definite ideas about the way in which their profession should be practiced and they express these attitudes and values to their students. Through this, the student learns to conform to a pattern of behavior and attitudes deemed "professional". Affective education thus becomes a crucial part of professional education. Health professional students should not only be competent practitioners in terms of cognitive and psychomotor skills but should also be sensitive, insightful, and able to perform with attitudes appropriate to a "professional" (Conners, 1979:32-39). Professional education attempts to modify the behavior of individuals to enable them to act proficiently in the unique situations for which they are preparing (Enright, 1972:153).

Quantitative or cognitive measurement without affec[illegible] volvement ignores a vital aspect of the learning relationship. Evaluation is a broader term than measurement including more than subject achievement alone. Evaluation must consider the student's personal growth and the effect of this growth on others (Enright, 1972:53).

Attitude and motivation are as important as cognitive activity to successful learning (Archer, 1974). Instructors can observe behaviors in students indicating whether or not they are aware of the desired stimulus and act accordingly rather than assuming that bombarding students with facts will produce awareness. Mager (1968) describes favorable attitudes as approach behaviors. He suggests that if behaviors rather than attitudes are described, there will be more concrete evidence to describe "approach response" and "avoidance response".

In summary, affective objectives should be included in the education of health professionals to teach desirable and appropriate behavior regarding the "feeling tone" of the student. Health professionals provide services directly and indirectly to human clients and therefore must address the issue of affective objectives to assist in assuring that these professions are practiced humanely and humanistically (Conners, 1979:32-39). Measurement of affective behavior is deemed important enough to be included as a requirement by many accrediting agencies of allied health education programs.

Advantages and Disadvantages of Observational Assessment

DeMers (1978:90) cites advantages of observational assessment as the ease of administration, low cost, application in a clinical setting with a variety of patients and situations [illegible]

instrument development, and the ability to evaluate learning outcomes beyond the realm of paper and pencil tests. Thorndike and Hagen (1969:480-81) cite advantages as a record of actual behavior and its application to a natural setting.

The major disadvantage according to DeMers (1978:90) is the problem in obtaining an objective and reliable assessment of behavior or outcome being evaluated. Thorndike and Hagen (1969: 480-81) list limitations as cost of observer time, the effect of fitting the observer into the setting, eliminating subjectivity and bias, determining a meaningful and productive set of behavior categories to observe, determining the significance of an isolated item of behavior, and the external character of observation (observing a behavior out of context).

In summary, there are numerous advantages and disadvantages cited for observational assessment; however, it remains the most useful technique for evaluating affective traits. The major disadvantage or limitation appears to be subjectivity and bias of the observer. These limitations can be diminished with proper construction of an evaluation tool.

Selecting and Defining the Behavior to be Evaluated

Any system of evaluation must proceed from stated objectives. Evaluation must stem from and reflect back upon these objectives of what ought to be in terms of what actually is (Thompson, 1969:562). A beginning point would be to select a manageable part of the field of concern and identify the major behavioral tasks or traits therein.

Once the traits or tasks to be evaluated are determined, the next step is to state these traits in terms of observed student behavior.

There is an obvious need for clarity of terminology and use of unambiguous statements from which individual instructors will have a similar understanding of what is being rated, thereby, increasing the objectivity of the tool. Since one can rate most objectively through observing rather than inferring, the statements used to describe the traits must assess observable behavior (Bobek, 1972:462-473).

The majority of rating scales have been developed by consensus or "in-committee" who identify behaviors expected by the instructors (Lynch, 1977:54). This could be accomplished by brainstorming, questionnaires, or surveys.

One means of survey would be to use a method described by Edwards (1957) in which traits are listed and the respondents are asked to judge them as to desirability according to extremely undesirable through neutral to extremely desirable. Lynch (1977:54-63) performed a similar survey to determine desirable behavior related to the performance of Medical Technology. From a list of one hundred and seventy two behaviors, she was able to narrow this down into nine behavioral categories with specific observable behaviors under each category.

Another method is that described by Flanagan (1954) called the Critical Incident Technique (CIT). This was developed as a method to systematize the process for behaviorally defining performance. The CIT is a set of procedures or collection of behavioral observations intended to assist in solving problems and/or developing principles. An incident is a behavioral description of a complete activity describing antecedents to the behavior, the behavior itself, and the consequences of the behavior. This technique involves recording of

facts only, no interpretation is allowed. The critical incident technique may be used to identify important or critical dimensions of behavior.

In summary, when developing an observational tool, the evaluation must be in terms of the objectives of the program. From the objectives the traits or tasks to be evaluated can be determined. These tasks or traits must then be expressed in terms of observed student behavior rather than inference of the observer. This then becomes a basis for minimizing observer subjectivity and bias.

Types of Observational Tools

Once the categories to be evaluated are determined and the observable behaviors are stated for the categories, the format for the observational form must be decided. The four most common formats which are utilized are the checklist, the rating scale, the anecdotal record and the critical incident technique.

The Checklist

The checklist consists of a prepared list of statements relating to the performance, actions, behavior traits, and/or the product of a performance. Each statement in the list is checked to determine the presence or absence of the quality, trait or action. The checklist requires an all or none response but does not indicate how much or how little of the characteristic is present.

Checklists are easy to administer, easy to score, can be used with large numbers of students, and are objective. They also provide clear feedback to the student. However, the checklist can be used only to determine the presence or absence of a characteristic -- it provides

no means of quantifying or judging the extent to which the student possesses the characteristic (DeMers, 1978: 93-94).

The Rating Scale

The rating scale consists of two major components: a set of defined tasks or behaviors on which students are judged and a scale associated with each trait which allows the observer to indicate the extent to which the trait is possessed by the student.

Many different forms of rating scales have been developed. Following is a description of two of the most commonly used forms.

A method developed by Thurstone in 1929 is described by Zimbardo, Ebbesen, and Maslach (1977: 214-215). This is titled Thurstone's Method of Equal-Appearing Intervals. Thurstone assumed that one could obtain statements of opinion about a particular issue and could order them according to favorableness and unfavorableness toward the issue. This results in a continuum which contains a list of statements ranging from favorable attitudes through neutral to very unfavorable with each statement having a scale value where placed on the continuum. This type of format results in a forced-choice indication of behavior where the observer must choose one of the statements along the continuum to describe the behavior.

Likert's Method of Summated Ratings described by Zimbardo, Ebbesen, and Maslach (1977: 215-218) is a second type of rating scale. This method utilizes a series of option statements about a subject and the observer indicates the extent of agreement to the statement or trait. This may be in the graphic form of strongly agree, agree,

undecided, disagree, strongly disagree or a numerical rating form from 1 through 5 indicating excellent to poor or some other designation indicating the extent of performance.

Lynch and Ezekiel (1981:98-105) describe a dependability and reliability study between these two types of rating scales. The Thurstone type which lists observable behaviors of a trait along a continuum from most to least acceptable is described as a "Behaviorally Anchored Scale". The Likert type which rates a student on a scale from 1 (least satisfactory) to 5 (most satisfactory) is described as a "Bare Trait Scale". This study reports very little difference between the behaviorally anchored scale and the bare trait scale with regard to internal properties. Each method exhibited moderate interrater reliability and both produced very dependable results when multiple observer ratings were pooled for decision purposes.

The rating scale has an advantage over the checklist in that it has a wide range of applications. It is a more adaptable form to measure affective traits.

The major disadvantage of the rating scale is its possible misuse resulting in a decrease in objectivity. This usually results from evaluators attempting to evaluate abstract, undefined traits rather than observable behaviors. Specific and clear definitions are needed for both the factors being evaluated and the reference points on the scale (Dohner, 1974).

A well-constructed rating scale can be utilized to inform the students of desirable behaviors and also provide a feedback mechanism

to the student indicating suggestions for improvement or the extent of meeting the desirable behaviors.

Anecdotal Records

The anecdotal record is a brief description of an observed behavior that appears significant for evaluation purposes. Anecdotal records can be used alone, however they are often combined with more structured instruments such as the checklist or rating scale. Used with these instruments, the rated behavior can be tied to a specific incident, therefore increasing the student's understanding of a rating.

Anecdotal records lend themselves well to formative evaluations which are not utilized for grading but instead help a student to understand their performance (DeMers, 1978:108-109).

Critical Incident Technique (CIT)

The Critical Incident Technique was developed by Flanagan (1954) and resembles a structured version of an anecdotal record. The CIT consists of a set of procedures or a collection of observed behaviors intended to assist in solving practical problems or develop principles. In utilizing the CIT for evaluative purposes, a specific trait may be related directly to specific behaviors by examining designated antecedents and consequences of a specific incident.

Summary

In summary, the choice of one or another of these rating forms is situation-dependent. The activity, trait, setting in which the evaluation is to be performed, the available personnel to make the assessment, and the type of information needed for making the decision

all play a part in determining the type of format or combination of formats to be utilized. If the specific variables and the performance criteria are not well-defined, then the critical incident report may be most useful. If well-defined criteria exist and the need is to judge the presence or absence of a trait, the checklist is the most valuable. If the need is to place a value on a trait, the rating scale may be most helpful. Anecdotal records, used as free-standing instruments, are the correct choice only when no other means of evaluating a particular trait exists.

Construction of an Evaluation Instrument

Any evaluative instrument must relate directly to the objectives that specify the performance expected of students. Therefore, all instruments developed must reflect these objectives. From these objectives, the performance area or traits to be evaluated are determined.

Once the traits to be evaluated are determined, the next step is analysis. Each trait must be broken down and defined into observable behaviors.

The type of form must be chosen and the descriptive behaviors must be adapted to the chosen format. For example, if the chosen format is a Thurstone type, behaviors must be defined to represent the various positions along the continuum.

If using a rating scale, the next step would be to define the number of reference points for the rating. There is no correct number to use, however the acceptable range is from three to seven. An odd number of points allows the rater to make the decision of average by marking down the center, where an even number of points force the

observer to rate the student as better or worse than average (DeMers, 1978:104).

The next step would be organizing the rating scale and examining the completed material for areas that may lead to rating errors. Redefinition of behaviors to increase objectivity should be done at this time.

Once the scale is completed, raters should be oriented to it and if necessary, revisions made according to their comments and experiences in the practice sessions. Training in the use of evaluative instruments is mandatory (Thompson, 1969:567). Borg and Gall (1979:339-341) list the first step in training observers as discussion of the form with the observers, describing each item sufficiently to develop a thorough understanding of what is to be observed and how it is to be recorded. The next step is to set up practice observations in which the observers participate. Next, they should practice further in settings where they will actually carry out their observations. Once the observers are trained to the desired level, they should begin their observations promptly to avoid a loss in observer skills.

In general, multiple observers increase validity of the evaluation. Averaged ratings are more reliable because personal biases of individual raters tend to cancel one another (DeMers, 1978:104).

Even the best designed scale may ask the evaluator to make inferences on a scaled continuum. In training of observers, it should be pointed out to them the most common rating errors which occur so they can take precautions to counteract them or prevent them. Guilford (1974) lists the following six common rating errors:

1. Error of lieniency - raters tend to rate those whom they know well or like higher than they should.
2. Error of central tendency - raters hesitate to give extreme judgements and thus tend to displace high or low ratings in the direction of the mean.
3. Halo effect - raters tend to judge one trait on the basis of their feelings about other characteristics of the student.
4. Logical error - raters tend to give similar ratings to traits that seem logically related.
5. Proximity error - raters tend to give similar ratings on traits adjacent to one another in the rating form.
6. Contrast error - raters tend to rate individuals in the opposite direction from the rater's perception of their own ability on a given trait.

The development of a well-constructed observational instrument and the proper training of observers to utilize the instrument help to decrease the subjectivity of the rating form. The less inference from the observer and the more observation of descriptive behavior, the more objective the observation becomes.

Chapter 3

DESCRIPTION OF THE PRODUCTION

The production was to be an instrument which could be utilized by educators to measure affective behavioral traits of Medical Technology students.

Evaluation forms were collected from programs located throughout the country (Appendix I). These forms were scrutinized and fourteen major categories were identified as those traits evaluated by a majority of programs. These traits were then grouped according to the affective domains established by Krathwohl, Bloom and Masia (1971) and objectives were developed for these categories.

Objectives

The intent of the Medical Technology Program is not only to teach students the hows and why-fors of laboratory techniques, but also to influence students in the development of positive attitudes toward learning and a value system that is consistent with the professionalism desired in all laboratory clinicians. The following affective objectives are presented as general program objectives. These are incorporated throughout the curriculum and are not the responsibility of one specific course.

The Medical Technology Student will:

1. Demonstrate an attitude of attending and receiving information provided by instructors.

This objective could be demonstrated by

a. arriving on time

b. beginning work promptly

c. remaining attentive when instructions are given

2. Demonstrate an attitude of responding to relevant stimuli.

This objective could be demonstrated by

a. displaying initiative toward duties

b. demonstrating co-operation towards fellow students and co-workers

c. demonstrating dependability in the performance of tasks

d. communicating in a clear and concise manner

e. demonstrating care and concern for clarity, orderliness and cleanliness

f. demonstrating good interpersonal relations with others

3. Demonstrate the development of a value system that is consistent with clinical laboratory professionalism.

This objective could be demonstrated by

a. treating lab results as confidential

b. avoiding deception of others in performance of lab procedures

4. Organize a value system such that values can be inter-related and priorities can be established in making decisions.

This objective could be demonstrated by

a. making efficient use of time

b. displaying organization in carrying out laboratory procedures

c. displaying ability to cope with volume increases or stress

d. designating proper priorities to tasks to be done

e. displaying willingness to assume responsibility

5. Identify and recognize their values and be aware that when their values are internalized, they affect their behavior and thoughts.

This objective could be demonstrated by

a. recognition of errors in work performance

b. demonstration of problem solving ability

c. exhibition of foresight

d. demonstration of self-confidence

e. ability to accept constructive criticism

f. ability to adjust to different situations

g. desire to improve self

Development of the Evaluation Form

The next step in developing the evaluation instrument was to determine statements of behavior which best described the fourteen behavior categories. Again, the evaluation forms which were collected were scrutinized and a list of forty nine behavioral statements were identified as defining these traits. A questionnaire was then developed listing these forty nine behaviors and mailed to Medical Technology Education Co-ordinators and Instructors throughout Pennsylvania.

The survey and cover letter (Appendix II) requested the respondents to do the following:

1. Classify each behavior according to the Behavior Category to which it best describes.
2. Rate each behavior according to its importance to the role of the Medical Technologist with (1) being low importance and (5) being high importance.

A total of forty three questionnaires were mailed and thirty one forms were returned reflecting a seventy two percent return rate. Thirty of these forms were able to be used to determine statistical data.

Behaviors were placed into the category to which each was assigned by the largest percentage of respondents. Several behaviors were deleted due to lack of clarity or respondents' judgements as to not measuring affective behavior. These behaviors are noted in Appendix III as either unclear or N.A. meaning not affective.

In order to select behaviors considered important, the mean rating was calculated for each behavior. This was done by adding the importance ratings of that behavior by all respondents and dividing by the number of respondents. The mean was calculated for each behavior using the number of respondents independent of the behavior category. Behaviors were eliminated if the mean importance rating was less than 4.0. This cut-off was chosen because in a five point rating scale, only those behaviors rated to be four or five were considered significant enough to measure.

Using this criteria, seventeen behaviors were eliminated. In addition, two other behaviors were eliminated because they were judged as not measuring affective behavior. This left a total of thirty behaviors to be included in the evaluation instrument. Appendix III gives the Behavior Category to which each behavior was assigned in Column A and Column B lists the mean importance rating for each behavior. Behaviors with an X through the number indicate statements which were eliminated.

Upon review of the behaviors, statement #4, "Arrives on time and begins work promptly", was felt to be expressing two separate behaviors. For this reason, this was separated into two behaviors giving a total of thirty one behaviors to be utilized in the instrument. These thirty one behaviors which survived the statistical screening were then placed in the appropriate Behavioral Categories.

The next step was to determine the type of rating scale to be utilized. Four common formats of observational instruments are available, these being the checklist, the rating scale, the anecdotal record and the critical incident technique. The checklist allows only a judgement of the presence or absence of a trait or quality and does not allow a quantitation of the extent to which the trait or quality is present. The rating scale allows the observer to indicate the extent to which the trait is possessed by the student. The anecdotal record and the critical incident technique both involve narrative descriptions of observed behaviors, therefore these formats are most useful in conjunction with the

rating scale or checklist to help a student understand their performance.

Since the intent of the evaluation instrument was to indicate the extent to which the student exhibited the behavior, the rating scale format was chosen. Two major formats of rating scales are most commonly utilized, these being the Thurstone scale and the Likert scale. The Thurstone scale involves a series of statements about a subject along a continuum from most acceptable to least acceptable. The observer must choose one of the statements to describe the observed behavior. This format results in a forced choice indication of behavior.

The Thurstone scale was not chosen because of the difficulty in developing a series of statements about a trait or behavior which can be equally scaled along a continuum. Also, the statements may not apply to a given situation, however the rater is forced to choose one of the statements as the indication of behavior.

The Likert-type scale utilizes a series of statements about a subject and the observer must indicate the extent of agreement to the statement or the trait. This format was chosen for the evaluation instrument because it allowed the rater to judge the degree of observed behavior. The following descriptions were chosen to indicate the extent the trait or quality is exhibited.

Commendable - level of performance consistently surpasses that of a Medical Technology student. The behavior noticeably exceeds that of most students.

Satisfactory - a student at this level fulfills the requirements in a manner expected of a Medical Technology student.

Improvement Required - behavior is somewhat below the expected level of a Medical Technology student, however, the student exhibits the capability to improve if confronted with suggestions.

Unsatisfactory - behavior is unacceptable to a Medical Technology student. This rating denotes failure. This rating would be appropriate if a student had been confronted with suggestions but showed no signs of improvement.

A rating of Unable to Observe (UTO) was added to be utilized when appropriate.

The questionnaire sent to educators also included the following question: "Do you feel affective behavior should receive a numerical grade and compose a portion of the final grade?" Fifty seven percent of the respondents answered yes and forty three percent answered no. This evaluation form was designed to be utilized either for a grade or as a progress report for counseling purposes, or both.

If a grade is to be determined, a numerical value can be affixed to each point on the rating scale and a numerical grade can be determined as follows:

Commendable = 6

Satisfactory = 4

Improvement Required = 2

Unsatisfactory = 0

The final grade can be determined as follows:

$$\text{Final Grade} = \frac{\text{Total Points}}{31 - \#\text{ of UTO}}$$

This figure could then be equated to a percentage as follows:

5.51 - 6.00 = 96%
5.01 - 5.50 = 93%
4.51 - 5.00 = 90%
4.01 - 4.50 = 86%
3.51 - 4.00 = 83%
3.01 - 3.50 = 80%
2.51 - 3.00 = 76%
2.01 - 2.50 = 73%
1.51 - 2.00 = 70%

Each program can adapt this form to their own grading scale and determine what their cut-off point would be which would indicate failure.

An alternative way to utilize this form would be to determine the average rating for each Behavioral Category and plot this over the entire year. Appendix IV shows a form which could be utilized for this purpose. This form would indicate if the student showed improvement when necessary which could be utilized in the counseling of the student. This information would be valuable when writing reference letters for students when asked to comment on affective traits.

Another feature of this evaluation instrument is that it allows space for comments and requires comments for ratings of Improvement Required and Unsatisfactory. This allows the rater to cite specific instances and suggest alternative behaviors which the student should have followed. By including this mechanism, it allows the form to be utilized as a teaching tool as well as an evaluation of performance.

BIBLIOGRAPHY

Archer, Patricia F. 1974. Student Behavior and Attitudes, the Affective Domain. The Media Systems Series in Creative Teaching, ERIC Document ED 184 599.

Beard, Michael A., Ann Hackleman, Gary Nielsen. 1979. "Methods and Procedures for Developing Attitudes Towards Learning." Paper presented at the meeting of the American Society for Medical Technology, Las Vegas, Nevada, July.

Bell, Jeanette R. 1975. "Study of Evaluation Criteria in Schools of Medical Technology." American Journal of Medical Technology, 41(2): 62-64.

Bobeck, Joanne R. 1972. "Evaluating Behavioral Traits in Students." American Journal of Medical Technology, 38(11), November: 462-473.

Borg, Walter R. and Meredith Damien Gall. 1979. Educational Research An Introduction. New York, London: Longman Publishers.

Brunner, Marjorie L. 1978. "A Systematic Approach to Medical Technology Curriculum Development." American Journal of Medical Technology, 44(12): 1163-1169.

Conners, Veronica L. 1979. "Teaching Affective Behaviors." Journal of Nursing Education, 18(6), June: 32-39.

Curran, Connie L. and Arnold E. Mattis. 1978. "Construction of a Reliable Instrument to Measure Attitudes." Nurse Educator, November/December: 6-8.

DeMers, Judy L. 1978. Evaluating Clinical Competence in the Health Professions. ed. Margaret K. Morgan and David M. Irby. Saint Louis: The C.V. Mosby Co.

Deyer, Carol A., Agnes A. Bongero. 1981. "Trigger Films For Teaching in the Affective Domain." American Journal of Medical Technology, 47(4): 225-258.

Dietrich, Marie C. 1980. "The Affective Domain in Medical Technology Education." American Journal of Medical Technology, 46(8): 576-580.

_____, and Hannah D. Zane. 1978. "Approaches to Student Clinical Evaluations." Presented to the Pennsylvania Society for Medical Technology, Mount Pocono, Pa.

Dohner, C.W. 1974. Clinical Evaluation: Alternatives for Health Related Educators. eds. D.M. Irby and M.K. Morgan. Gainesville: University of Florida Center for Allied Health Instructional Personnel.

Downs, Gary E. 1972. A Comparison of the Affective Behavior of Students Enrolled in Various High School Science Courses as Measured by an Instrument Developed Using the Affective Domain Continuum. Unpublished Doctoral Dissertation: University of Northern Colorado, ERIC Document ED 184 879.

Edwards, Allen L. 1957. The Social Desirability Variable in Personality Assessment and Research. New York: Holt, Rinehart, and Winston, Inc.

Enright, Michael J. 1972. Educating Personnel for the Allied Health Professions - Administrative Considerations. eds. Edmund J. McTernan and Robert O. Hawkins. Saint Louis: The C.V. Mosby Co.

Flanagan, J.C. 1954. "The Critical Incident Technique." Psychological Bulletin, 56: 327-358.

Ford, Charles W. ed. 1978. Clinical Education for the Allied Health Professions. Saint Louis: The C.V. Mosby Publishing Co.

Gluck, Sandra C. 1980. "The Development of Professional Attitudes in Medical Technology Students." Laboratory Medicine, 11(6): 386-390.

Guilford, J.P. 1974. Psychometric Methods. New York: McGraw-Hill Co.

Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia. 1964. Taxonomy of Educational Objectives - The Classification of Educational Goals - Handbook II: The Affective Domain. New York: David McKay Co. Inc.

Lynch, Bonnie L. 1977. "A Behaviorally Anchored Rating Scale for the Evaluation of Student Performance." American Journal of Medical Technology, 43(1), January: 54-63.

_____, Warren E. Lancefield and Patricia A. Ezekiel. 1981. "Dependability and Interrater Reliability of Two Types of Rating Scales." American Journal of Medical Technology, 47(2), February: 98-105.

McTernan, Edmund J. and Robert O. Hawkins, eds. 1972. Educating Personnel for the Allied Health Professions - Administrative Considerations. Saint Louis: The C.V. Mosby Co.

Mager, Robert F. 1968. Developing Attitudes Toward Learning. Belmont, California: Fearon Publishers.

Morgan, Margaret K. and David M. Irby eds. 1978. Evaluating Clinical Competence in the Health Professions. Saint Louis: The C.V. Mosby Co.

Page, R.L., M. Dash and M. Orr. 1972. Attitude Assessment in Science and Technology. ERIC Document ED 179 385.

Rines, Alice R. 1963. "Evaluating Student Progress in Learning the Practice of Nursing." Nursing Education Monograph Number 5. Columbia University Bureau of Publications: 62.

Rowley, Glenn L. 1976. "The Reliability of Observational Measures." American Educational Research Journal. 13(1), Winter: 51-59.

Snyder, John R. and Jana C. Wilson. 1980. "Evaluation of Student Performance in the Clinical Setting Using the Process Skills Approach." Journal of Allied Health. 9(2), May: 125-131.

Thompson, A. Gray. 1969. "The Shadow and Substance of Evaluating Students in Medical Technology." American Journal of Medical Technology. 35(9), September: 561-567.

Thorndike, Robert L. and Elizabeth Hagen. 1969. Measurement and Evaluation in Psychology and Education. New York: John Wiley and Sons, Inc.

Zabezensky, Ferne. 1971. "Professional Ethics and the Medical Technology Student." Cadence. 2(4), July-August: 37-38.

Zimbardo, Phillip G., Ebbe B. Ebbesen, and Christina Maslach. 1977. Influencing Attitudes and Changing Behavior. Reading, Mass.: Addison-Wesley Publishing.

Zufall, Dorothy L. 1977. "Orientation: It's Presence Will Enhance the Future." American Journal of Medical Technology, 43(1): 31-32.

Appendix I

COLLECTION OF EVALUATION FORMS

Evaluation forms were collected from the following institutions.

1. Allegheny General Hospital, Pittsburgh, Pa.
2. Bryn Mawr Hospital, Bryn Mawr, Pa.
3. Harrisburg Hospital, Harrisburg, Pa.
4. Holy Spirit Hospital, Camp Hill, Pa.
5. Lancaster General Hospital, Lancaster, Pa.
6. McKeesport Hospital, McKeesport, Pa.
7. Montgomery College, Takoma Park, Maryland
8. St. Joseph Hospital, Lancaster, Pa.
9. University of Illinois, Chicago, Illinois
10. University of New Mexico, Albuquerque, New Mexico
11. Weber State College, Ogden, Utah
12. York Hospital, York, Pa.
13. Twenty evaluation forms supplied in various workshops with the names of the institutions removed.

Appendix II

SURVEY QUESTIONNAIRE

Dear Education Co-ordinator,

I am writing to you to request your assistance with my Master's Paper. I am trying to develop an evaluation form to measure affective behavioral traits of Medical Technology students and would greatly appreciate a few moments of your time to complete the attached questionnaire.

On the following pages you will find a number of behaviors which have been taken from evaluation forms which are currently in use in Medical Technology Programs.

You are asked to do the following:

1. In Column A, classify each behavior according to the BEHAVIOR CATEGORIES described on the next page. It is suggested you tear out the category description page and place it next to the page on which you are working. In Column A, write only the number of the category to which you would assign this behavior.
2. In Column B, rate each behavior according to its importance to the role of the Medical Technologist. These ratings will help to determine if this behavior should be included in an evaluation form or provide "weighting" for the categories. Consider the behavior and ask yourself, "Would it really make a difference in an individual's performance as a Medical Technologist?" In Column B place a number from 1 (low importance) to 5 (high importance) which reflects your rating of this behavior.

Also, as you go, would you please check for duplication. If you detect these, please write "same as number ___" beneath the behavior.

Thank-you very much for your assistance. I will be happy to share the final form with you if it turns out to be worthwhile.

Sincerely,

Janice M. Fogleman
Education Co-ordinator
Medical Technology Program
Harrisburg Hospital
Harrisburg, Pa. 17101

Appendix II

BEHAVIOR CATEGORIES

1. Attendance and Punctuality
2. Willingness to Receive Instruction
3. Initiative
4. Co-operation
5. Dependability
6. Communication
7. Honesty and Integrity
8. Efficiency and Organization
9. Leadership
10. Judgement
11. Self-confidence
12. Attitude
13. Interpersonal Relations
14. Carefulness and Concern for Clarity, Orderliness, and Cleanliness

Appendix II

BEHAVIORS

		COLUMN A	COLUMN B
1.	Makes efficient use of time.		
2.	Treats lab results as confidential.		
3.	Can be trusted to work alone, minimum supervision required.		
4.	Arrives on time and begins work promptly.		
5.	Remains alert to surroundings.		
6.	Recognizes duties -- sees things to be done without being told.		
7.	Ability to cope with volume increases and/or stress.		
8.	Ability to communicate with others -- fellow students, technologists, physicians and patients.		
9.	Volunteers to answer questions -- joins in discussions.		
10.	Willing to perform duties as requested.		
11.	Follows established procedures and safety measures.		
12.	Demonstrates ability to plan or direct work of others.		
13.	Leaves equipment and working area clean and in good order.		
14.	Maintains a compatible relationship with instructor.		
15.	Enjoys learning -- enthusiastic.		

	COLUMN A	COLUMN B
16. Demonstrates confidence in work performance.		
17. Shows interest in and respect for fellow students and co-workers.		
18. Retains, recalls, and applies material readily.		
19. Consistently maintains good personal grooming.		
20. Gives sufficient advance notice of absences.		
21. Remains attentive when instructions are given.		
22. Ability to concentrate on performance of tasks -- not easily distracted.		
23. Is absent a minimal amount of time with justification.		
24. Strongly motivated -- consistently makes effort to carry out tasks.		
25. Designates proper priorities to tasks to be done.		
26. Avoids deception of peers, instructors and supervisors in lab procedures (ex. avoids unacceptable shortcuts; does not manipulate results or cover up mistakes).		
27. Minimal repeat of tests required.		
28. Written reports are legible and easily understood.		
29. Offers to help others when finished with own work.		
30. Exhibits desire to know more about department or subject.		

	COLUMN A	COLUMN B
31. Readily follows through on procedures within his scope of ability.		
32. Can organize and perform several procedures simultaneously without sacrificing accuracy.		
33. Willing to help others -- fellow students and co-workers.		
34. Consults instructor about unusual problems and/or situations (technical and/or administrative) when necessary.		
35. Replenishes supplies or notifies others of need for such.		
36. Recognizes errors in work performance.		
37. Maintains a compatible relationship with classmates.		
38. Willingness to assume responsibility.		
39. Exhibits problem solving ability.		
40. Ability to work effectively with others -- fits in well with people in routine department.		
41. Constructively suggests modifications of educational and/or supervisory policy if the occasion arises.		
42. Flexible -- is able to adjust well to different situations.		
43. Able to accept constructive criticism.		
44. Transfers information and/or experience from one situation to another.		
45. Avoids overrating or underrating oneself or blaming others for shortcomings.		

	COLUMN A	COLUMN B
46. Sets realistic goals consistent with capabilities.		
47. Derives personal satisfaction from work.		
48. Exhibits desire to improve self.		
49. Exhibits foresight -- ability to anticipate needs.		

Do you feel affective behavior should receive a numerical grade and compose a portion of the final grade? _____Yes _____No

If yes, what % should it receive? _____

Please comment on any aspect of this questionnaire on the back.

Appendix III

SURVEY STATISTICS

		CATEGORY ASSIGNMENT	MEAN IMPORTANCE
1.	Makes efficient use of time.	8	4.47
2.	Treats lab results as confidential.	7	4.72
3.	Can be trusted to work alone, minimum supervision required.	5	4.53
4.	Arrives on time and begins work promptly.	1	4.00
XX.	Remains alert to surroundings.	unclear	3.59
6.	Recognizes duties -- sees things to be done without being told.	3	4.30
7.	Ability to cope with volume increases and/or stress.	8	4.53
8.	Ability to communicate with others -- fellow students, technologists, physicians and patients.	6	4.20
XX.	Volunteers to answer questions -- joins in discussions.	6	2.93
10.	Willing to perform duties as requested.	4	4.37
11.	Follows established procedures and safety measures.	5	4.62
XX.	Demonstrates ability to plan or direct work of others.	9	3.17
13.	Leaves equipment and working area clean and in good order.	14	4.03
XX.	Maintains a compatible relationship with instructor.	13	3.57
XX.	Enjoys learning -- enthusiastic.	12	3.67

Appendix III

		CATEGORY ASSIGNMENT	MEAN IMPORTANCE
16.	Demonstrates confidence in work performance.	11	4.17
17.	Shows interest in and respect for fellow students and co-workers.	13	3.77
18.	Retains, recalls, and applies material readily.	N.A.	4.32
19.	Consistently maintains good personal grooming.	14	3.40
20.	Gives sufficient advance notice of absences.	1	3.72
21.	Remains attentive when instructions are given.	2	4.33
22.	Ability to concentrate on performance of tasks -- not easily distracted.	5	4.50
23.	Is absent a minimal amount of time with justification.	1	3.80
24.	Strongly motivated -- consistently makes effort to carry out tasks.	3	4.40
25.	Designates proper priorities to tasks to be done.	8	4.50
26.	Avoids deception of peers, instructors and supervisors in lab procedures (ex. avoids unacceptable shortcuts; does not manipulate results or cover up mistakes).	7	4.93
27.	Minimal repeat of tests required.	8	4.18
28.	Written reports are legible and easily understood.	14	4.47
29.	Offers to help others when finished with own work.	4	3.90
30.	Exhibits desire to know more about department or subject.	3	3.97

Appendix III

		CATEGORY ASSIGNMENT	MEAN IMPORTANCE
31.	Readily follows through on procedures within his scope of ability.	5	4.43
32.	Can organize and perform several procedures simultaneously without sacrificing accuracy.	8	4.55
33.	Willing to help others -- fellow students and co-workers.	4	4.00
34.	Consults instructor about unusual problems and/or situations (technical and/or administrative) when necessary.	10	4.50
XX.	Replenishes supplies or notifies others of need for such.	3	3.87
36.	Recognizes errors in work performance.	10	4.83
XX.	Maintains a compatible relationship with classmates.	13	3.53
38.	Willingness to assume responsibility.	9	4.13
39.	Exhibits problem solving ability.	10	4.43
40.	Ability to work effectively with others -- fits in well with people in routine department.	13	4.03
XX.	Constructively suggests modifications of educational and/or supervisory policy if the occasion arises.	9	3.40
42.	Flexible -- is able to adjust well to different situations.	12	4.40
43.	Able to accept constructive criticism.	12	4.20
XX.	Transfers information and/or experience from one situation to another.	N.A.	4.23
XX.	Avoids overrating or underrating oneself or blaming others for shortcomings.	12	3.67

Appendix III

		CATEGORY ASSIGNMENT	MEAN IMPORTANCE
XX.	Sets realistic goals consistent with capabilities.	10	3.90
XX.	Derives personal satisfaction from work.	12	3.80
48.	Exhibits desire to improve self.	12	4.13
49.	Exhibits foresight -- ability to anticipate needs.	10	4.00

Do you feel affective behavior should receive a numerical grade and compose a portion of the final grade? 57% Yes 43% NO

If yes, what % should it receive: 20-22%

Appendix IV

STUDENT PROGRESS REPORT

Student Name

	HEMATOLOGY Dates	BLOOD BANK Dates	CHEMISTRY Dates	MICROBIOLOGY Dates	SEROLOGY Dates	FINAL GRADE
Attendance & Punctuality						
Willingness to Receive Instruction						
Initiative						
Co-operation						
Dependability						
Communication						
Orderliness & Cleanliness						
Interpersonal Relations						
Honesty & Integrity						
Efficiency & Organization						
Leadership						
Judgement						
Self-confidence						
Attitude						

THE PRODUCTION

ABSTRACT

The production is an observational rating scale to measure affective behavioral traits of Medical Technology Students.

In order to minimize observer subjectivity, traits are defined in terms of observable behavior rather than abstract terms. A survey was conducted of Medical Technologists to identify behavioral traits they felt to be important to the practice of the profession. Affective objectives were then developed and a rating scale was devised to measure these traits.

An Instruction Manual is included with the evaluation form to describe suggested procedure and use of the form.

INSTRUCTION MANUAL

AFFECTIVE BEHAVIOR EVALUATION FORM

The attached evaluation form was developed from responses by Medical Technologist educators who were surveyed to determine behavior which they felt to be important to the practice of Medical Technology.

Objectives

The form was developed with the following behavioral objectives in mind:

The intent of the Medical Technology Program is not only to teach students the hows and why-fors of laboratory techniques, but also to influence students in the development of positive attitudes toward learning and a value system that is consistent with the professionalism desired in all laboratory clinicians. The following affective objectives are presented as general program objectives. These are incorporated throughout the curriculum and are not the responsibility of one specific course.

The Medical Technology Student will:

1. Demonstrate an attitude of attending and receiving information provided by instructors.

   This objective could be demonstrated by

   a. arriving on time

   b. beginning work promptly

   c. remaining attentive when instructions are given

2. Demonstrate an attitude of responding to relevant stimuli.

   This objective could be demonstrated by

   a. displaying initiative toward duties

   b. demonstrating co-operation towards fellow students and co-workers

   c. demonstrating dependability in the performance of tasks

   d. communicating in a clear and concise manner

   e. demonstrating care and concern for clarity, orderliness and cleanliness

   f. demonstrating good interpersonal relations with others

3. Demonstrate the development of a value system that is consistent with clinical laboratory professionalism.

   This objective could be demonstrated by

   a. treating lab results as confidential

   b. avoiding deception of others in performance of lab procedures

4. Organize a value system such that values can be inter-related and priorities can be established in making decisions.

   This objective could be demonstrated by

   a. making efficient use of time

   b. displaying organization in carrying out laboratory procedures

   c. displaying ability to cope with volume increases or stress

d. designating proper priorities to tasks to be done

e. displaying willingness to assume responsibility

5. Identify and recognize their values and be aware that when their values are internalized, they affect their behavior and thoughts.

This objective could be demonstrated by

a. recognition of errors in work performance

b. demonstration of problem solving ability

c. exhibition of foresight

d. demonstration of self-confidence

e. ability to accept constructive criticism

f. ability to adjust to different situations

g. desire to improve self

Uses

This evaluation form is designed to be utilized either as a progress report or as a means of equating affective behavior to a numerical grade, or both.

If a grade is not required, the form can be designed without point values and can be utilized for counseling purposes.

If a grade is desired, a rating can be attached to each point of the rating scale. These numbers can then be averaged and equated to a numerical grade. This can be adapted to whatever grading scale is utilized at your institution and your own standards of passing or failing applied.

This form may also be used as a progress report that can be kept throughout the entire year. An average rating can be determined

for each major behavior category with a final overall rating determined. This information can be very useful when writing reference letters for employment and as an indication of progress when counseling students.

The form also provides space for comments and requires comments for ratings of Improvement Required or Unsatisfactory. Specific incidences which affected ratings should be noted and suggested alternative behaviors should be listed. This allows the form to be utilized as a teaching tool to point out suggested behaviors. This also will help in counseling the student to be able to point out specific incidences.

This evaluation instrument is designed to measure affective behavior only. It should be utilized in conjunction with other means of measuring technical skills and should not be utilized as an overall evaluation of student performance.

Orientation of Observer

The greatest disadvantage in utilizing an observational rating scale is that assessments are subjective. Careful definition of behavior and the criteria by which it is judged helps to eliminate subjectivity and inconsistency in evaluation. In order to increase interrater reliability, raters should be oriented to the use of the form. This orientation should be conducted by the Director of the Program with all persons who will utilize the form. This orientation should involve discussion of the form, describing each item sufficiently to develop a thorough understanding of what is to be observed and how it is to be recorded. Research suggests that the most dependable results are obtained when multiple observer ratings

are pooled for decision purposes. Therefore, the best way to utilize the form would be to have multiple persons evaluate the student in each department then average these ratings into a departmental composite evaluation. This orientation to the form should be conducted a minimum of once a year, perhaps at the beginning of each student year and a biannual orientation would help to avoid loss of observer skill.

MEDICAL TECHNOLOGY STUDENT

AFFECTIVE EVALUATION

STUDENT_____

DEPARTMENT_____ DATES IN DEPARTMENT_____

INSTRUCTIONS TO EVALUATOR

In the blocks provided to the right of each statement, place a check mark in the appropriate block based on the following scale.

6 points - COMMENDABLE - level of performance consistently surpasses that required of a Medical Technology student. The behavior noticeably exceeds that of most students.

4 points - SATISFACTORY- a student at this level fulfills the requirements in a manner expected of a Medical Technology Student.

2 points - IMPROVEMENT REQUIRED - behavior is somewhat below the expected level of a Medical Technology Student, however, the student exhibits the capability to improve if confronted with suggestions.

0 points - UNSATISFACTORY - behavior is unacceptable to a Medical Technology Student. This rating denotes failure. This rating would be appropriate if a student had been confronted with suggestions but showed no signs of improvement.

UTO - UNABLE TO OBSERVE THE DESCRIBED BEHAVIOR.

NOTE - Comments are required for any ratings of Improvement Required or Unsatisfactory. Note specific incidences and list alternative actions which the student should have taken.

$$\text{Final Grade} = \frac{\text{Total Points}}{31 - \#\text{ of UTO}}$$

Final Grades will be determined as follows:

5.51 - 6.00 = 96%	2.51 - 3.00 = 76%
5.01 - 5.50 = 93%	2.01 - 2.50 = 73%
4.51 - 5.00 = 90%	1.51 - 2.00 = 70%
4.01 - 4.50 = 86%	
3.51 - 4.00 = 83%	
3.01 - 3.50 = 80%	

	COMM. 6 pts.	SAT. 4 pts.	I.R. 2 pts.	UNSAT 0 pts.	UTO	COMMENTS
ATTENDANCE AND PUNCTUALITY						
1. Arrives on time.						
2. Begins work promptly.						
WILLINGNESS TO RECEIVE INSTRUCTION						
1. Remains attentive when instructions are given.						
INITIATIVE						
1. Recognizes duties -- sees things to be done without being told.						
2. Consistently makes effort to carry out tasks.						
CO-OPERATION						
1. Willing to perform duties as requested.						
2. Willing to help others -- fellow students and co-workers.						
DEPENDABILITY						
1. Can be trusted to work alone, minimum supervision required.						
2. Follows established procedures and safety measures.						
3. Ability to concentrate on performance of tasks -- not easily distracted.						
4. Readily follows through on procedures following initial instruction.						
COMMUNICATION						
1. Ability to communicate with others -- fellow students, technologists, physicians and patients.						

	COMM. 6 pts.	SAT. 4 pts.	I.R. 2 pts.	UNSAT. 0 pts.	UTO	COMMENTS
CARE & CONCERN FOR CLARITY, ORDERLINESS & CLEANLINESS						
1. Written reports are legible and easily understood.						
2. Leaves equipment and working area clean and in good order.						
INTERPERSONAL RELATIONS						
1. Ability to work effectively with others -- fits in well with people in routine department.						
HONESTY AND INTEGRITY						
1. Treats lab results as confidential.						
2. Avoids deception of peers, instructors and supervisors in lab procedures (ex. avoids unacceptable shortcuts, does not manipulate results or cover up mistakes).						
EFFICIENCY AND ORGANIZATION						
1. Makes efficient use of time.						
2. Ability to cope with volume increases and/or stress.						
3. Designates proper priorities to tasks to be done.						
4. Minimal repeat of tests required.						
5. Can organize and perform several procedures simultaneously without becoming flustered.						
LEADERSHIP						
1. Willingness to assume responsibility.						

	COMM. 6 pts.	SAT. 4 pts.	I.R. 2 pts.	UNSAT. 0 pts.	UTO	COMMENTS
JUDGEMENT						
1. Recognizes errors in work performance.						
2. Exhibits problem solving ability.						
3. Exhibits foresight -- ability to anticipate needs.						
4. Consults instructor when unusual problems or situations arise.						
SELF-CONFIDENCE						
1. Demonstrates confidence in work performance.						
ATTITUDE						
1. Flexible -- is able to adjust well to different situations (ex. different assignments or different instructors.						
2. Ability to accept constructive criticism.						
3. Exhibits desire to improve self.						

OVERALL GRADE_____

_____ _____

Signature of Evaluator Date Signature of Student Date

STUDENT COMMENTS: